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PREPARATION OF WOODLAND MANAGEMENT PLANS
AND
RELATED CONSIDERATIONS

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PREPARATION OF WOODLAND MANAGEMENT PLANS
AND
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Introductory

The following information relates to basic considerations in woodlands work and the function of woodlands personnel in developing material for inclusion in the plan of conservation operations for land areas under consideration, and as well, related factors of importance.

There are three important guiding principles which form the basis for direction of effort. These are:

1. Members of the woodland section are primarily soil conservationists, not foresters. As soil conservationists they must be fully conversant with the soil conservation program for each unit under consideration and should aid, in company with other technicians, in instituting practicable and effective methods of controlling erosion through proper application of woodland techniques and by proposing such other controls as will be most desirable.
2. To develop woodland techniques to properly handle the problems presented. This may necessitate changes in existing techniques and the development of new techniques. The use of any woodland technique existing or proposed must be based on obtaining effective and permanent results under controlled use at lower costs than by other controls proposed.
3. To actively assist in the execution of woodland techniques proposed, to be sure that such techniques are properly applied, will be most effective and as well instituted at reasonable costs.

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It has been noted that we should view problems presented primarily from the standpoint of soil conservation. Placing major emphasis on forestry could well result in looking, for example, for opportunities to plant trees irrespective of their value in meeting the needs of the problem presented with no consideration of the disadvantages to range cooperators in requiring clean cultivation and other practices for the proper establishment and growth of plantings that are neither desirable from the standpoint of the needs of the cooperator nor necessary from the standpoint of soil conservation.

Proper consideration must be given to the development of necessary restrictions in the use of existing woodland and timber stands whose location is strategic from the standpoint of the requirements of soil conservation. Old techniques should be overhauled if need be and new techniques must be developed to take advantage of the use of vegetative controls whose action under proper use will be effective and permanent and whose application can be made with a reasonable cost.

Members of the woodland section are necessarily intimately concerned with the execution of controls proposed by their portion of the plan of conservation operations. Techniques are properly developed only by participating in work to be accomplished and by intelligent observation of the results obtained. More direct supervision of techniques on work areas is essential.

A discussion of basic considerations in the preparation of woodland management plans is presented under the following headings:

1. Development of woodlands appreciation
2. Woodland management plans
 - a. Basic considerations applying to existing woodland and timber stands.
 - b. Stand improvement.
 - c. Planting considerations.
 - d. Fire protection requirements.

Development of Woodlands Appreciation

In most instances throughout the Southwest, woodland and timber stands are considered by private owners as a liability rather than as an asset. This viewpoint of private owners usually results from past and present activity in removing tree growth in order to produce cultivated crops or to increase the quantity of range forage. Such practices are, under given conditions of erosion and land ownership, detrimental to our program of soil conservation. Changing this viewpoint to obtain our objective presents a problem of no little magnitude.

The development of woods appreciation on the part of private owners is most necessary, a problem that must be attacked and solved to the fullest reasonable degree. A desirable method of approach with selected individuals might require keeping records over a period of years to determine their annual requirements for wood materials, together with the reasonable assignment of values thereto. In some instances, a survey of the prospective cooperators' woodland or timber stands to determine the products present and their value may prove desirable.

Irrespective of the means employed, advantage should be taken of every opportunity to develop a woods appreciation on the part of the private owner which has its basis in accurate and understandable data.

Woodland Management Plans

Basic Considerations Applying to Existing Woodland and Timber Stands

It should be stated at the outset that the plan of conservation operations must be based upon meeting two requirements: (1) the economic needs of the cooperator and (2) the soil conservation problem present on the land.

While it may be desirable in many instances to determine the kind and quantity of wood products through the medium of surveys, to do so is not always necessary. The private owner may be located near a National Forest from which his needs can be adequately supplied. Again, the quantity of materials on his lands may be in excess of his needs. The need for surveys is, therefore, a matter of judgment, based upon existing conditions.

Many instances will occur when the greater part of a land unit for which plans are to be made carries woodland or timber species. Provided the economic requirements of the owner can best be met by changing the use of part of the area to pasture, or if soil conditions are satisfactory to cultivated crops, there should be no hesitancy on the part of the woodlands representative present to concur in well-founded proposals for changes in the use of land, provided the requirements of soil conservation can otherwise be adequately provided for.

We are dealing with various types of woodland and timber stands. At lower elevations over a large part of Region 8, one-seed juniper is predominant often occurring as isolated trees in well-sodded areas, or again as open pure stands, or in mixture with pinon on slopes whose other vegetative cover was originally in delicate balance and now largely destroyed by excessive range use.

In the first instance, we might obtain agreement of the owner to maintain the type through his approval of stipulations which would be included in the plan of conservation operations. If the owner would not agree to the stipulations proposed his stand would not invalidate the proposed agreement, provided the requirements of soil conservation were otherwise properly handled.

In the second instance, it would be a requirement of the plan that the woodland should be maintained and stipulations as to use or non-use of material developed to allow necessary protection to the site by the woodland cover remaining.

Provided it can be shown that the woodland cover should be maintained in the one-seeded juniper type through continuing need for posts, fuel or other products by the owner and where the requirements of soil conservation can be adequately taken care of irrespective of the presence of the woodland stand present, the plan of conservation operations could well present the following stipulations:

1. The cooperator agrees when cutting post material to cut the minimum necessary amount from each tree clump to obtain the products desired.
2. Removal of material for fuel wood by the cooperator will not necessitate removal of entire trees, except in instances when old, over-mature trees should be taken or existing reproduction needs release.
3. The cooperator agrees to use all brush from cutting by first placing this brush in gullies and old roads adjacent to the cutting area. After these needs are met, the brush will be scattered on areas of limited grass cover. All brush will be cut to lie not over 18 inches above the ground.
4. The S.C.S. offers technical advice to the cooperator on call to assist him in methods of selecting and harvesting wood products.

For the conditions noted, if the owner does not agree with the stipulations proposed there is one that must be included if the condition of his land can be materially bettered, namely, stipulation three.

Stipulations of a more stringent nature must be included where woodland stands are positioned in localities of active erosion.

All gradations of conditions may be found. It is up to the woodlands representative to determine the stipulations to be included in the plan of conservation on the basis of any given situation with which he is confronted.

With increasing elevation, the woodland and timber types will provide greater soil protection and naturally play a larger part in conservation plans. To provide for soil conservation needs, use stipulations must be prepared for inclusion in the plan of conservation operations if the woodland or timber cover is to continue to fulfill and augment its present function of soil conservation, which cannot be effectively handled by the use of other vegetative cover.

Instances may be observed where exclusion of livestock from the better woodland and timber stands may be practical through adjustment of fences on other parts of the owners' unit to take care of his livestock requirements.

It is apparent, therefore, that sound judgment, based on a complete understanding of the soil conservation problem and the economic needs of the land owner is necessary to proper determination of stipulations to be included in the plan of conservation operations.

In no instance will any of the stipulations prepared include the statement "for the period of this agreement." The agreement itself covers a five-year period. It is poor psychology to keep reminding the cooperator of application covering a short period of time since our objective is a continuing, not a temporary program of soil conservation.

Stand Improvement

The purpose of stand improvement is to show how economic use of woodland and timber stands will benefit the owner so that he will continue to maintain the woodland and timber cover. It should hardly be necessary to add that all marking will be done in accordance with the need for control of soil loss.

It is often the case that the owner does not intend to remove any live trees at the time an examination is made of his area. If so, a stipulation should be entered in the plan to the effect "The cooperator agrees to follow marking practices recommended by the S.C.S. for the removal of all living trees." In the event the land owner intends to cut live trees, a marking plot of small size (1-2 acres) should be established in which the material to be removed will be indicated. A stipulation to the effect that the cooperator will follow the marking practices recommended as shown by numbered marking plots on his property should be included in the plan of conservation operations.

These marking plots should not be cut over for products, since they form a location of reference as to proper marking practices. One or more may be needed depending on stand conditions and the kind of products desired.

Public demonstration plots on highways may be desirable.



Improvement of woodland stands may be effected in whole or in part in connection with control operations. Over-mature, deformed trees may be removed for release of advance reproduction to supply brush needed for erosion control structures or gully brushing. Brush from products cut for fencing or other purposes should be used most effectively. Differing situations require differing action, and members of the woodland section should be alive to possibilities presented for stand improvement work that can be accomplished, the charges to be made against the major purpose for which the material is to be used.

In view of the lack of information available relative to marking in woodland stands, the head of the woodland section, or his assigned representatives, in each district or project, will assume the responsibility for selection and marking of stand improvement plots.

Planting Considerations

The development of planting plans and their proper execution applying to the use of rooted stock (trees and shrubs) constitutes an important phase of woodlands activities. In all instances, the primary purpose of planting is for control of erosion. Secondary purposes, however, must be given full consideration. Except for plantings for which the major secondary purpose is for wildlife the preparation of plans is a function of the woodland section. Provided the major secondary purpose of planting is for the production of wood products or edible fruits furnished by native shrubs or trees for human consumption, the preparation of planting plans is clearly indicated as a function of the woodland section. In many instances the biology section should be consulted in order that the plan prepared provide to the fullest reasonable extent for wildlife benefits.

If a given species of tree constitutes a fully effective vegetative agent for control of erosion and will in addition produce wood products or edible fruit of value its use in proper locations is most worthwhile. In no instance, however, should the secondary purpose be allowed to overshadow the primary purpose of erosion control.

In view of the erosion problem exhibited in Region 8 the major portion of planting activities will be concerned with vegetative control of gullies in locations where the plantings proposed will have reasonable chances of success.

Well reasoned planting plans form the proper basis for action. In the preparation of plans, adequate thought and care is most necessary so that all aspects of problems presented are fully understood allowing sound proposals for control. Planting instructions and supervision to be sure that such instructions are carried out forms the execution phase of planting activities.

Woodlot plantings for post and other wood materials and wind-break plantings will be of minor consideration except in certain instances.

The objectives in control of small gullies are:

1. To get trees established to protect banks receiving the full force of the stream flow.
2. Establish trees on opposite banks at the base of the cut but not on established bars.

Closer spacing and attention to detail of plantings are most important in the first instance, wider spacing will often suffice in the second instance.

Channel blocking due to placement of trees planted should not be attempted except with *Salix exigua* or similar low growing forms of willows.

The use of various species of native bush willows whose habit of increase is by root stocks should be given major preference in use. It has been reported that willow seedlings will stand dryer locations than rooted cuttings. New Mexico locust may offer possibilities in dry locations as may *Rhus trilobata*. Some consideration may also be given to osage orange, black locust and to other species in given locations to control erosion and to provide future usable products.

Larger stream bottoms will usually require differing treatment: On the one hand protection of banks receiving the full force of the stream flow at high or low water points may require the use of post cuttings of native and introduced black willows and on the other hand on the cuts affected by high water the use of smaller cuttings or posts may be effective.

In all instances, plantings will not be placed too far out on bars where their future growth will materially influence the direction of flood flows unless well founded reasons are presented for such action.

From past experience the tree species best suited for an edge position are native or introduced black willows. Behind the establishment of a proper edge planting which may consist of three or four rows of black willows, demonstration plantings of silt resistant species of value in holding silt from flood flows may be made to produce products of value.

An examination of past plantings of this character is now in progress and more detailed instructions will be provided at a later date.

While planting may often be feasible without livestock exclusion no planting should be attempted until reduction to carrying capacity occurs. No further provision for protection from grazing is necessary except where it is apparent that due to given conditions the erosion control effectiveness of the proposed planting will be too adversely affected by livestock use. These conditions relate to degree of vegetative depletion with relation to planting sites, situations allowing the congregation of livestock, such as limited permanent water, and natural trailing locations as well as other factors that bear upon the effectiveness of the proposed planting. Under such conditions provision must be made for livestock exclusion to be sure that the planting fulfills its primary function.

Woodlot and windbreak plantings will in some localities offer excellent opportunities. Possibilities of their use should be fully understood and explored. In all cases, if such plantings are proposed the plan of conservation operations must provide for clean cultivation and protection from grazing.

A limited number of successful results have been obtained through direct seeding of tree species. Opportunities in this field undoubtedly exist and should be developed to the fullest reasonable extent. While some success has been had with native walnut, mesquite and evergreen oaks, further study is needed relative to methods of direct seeding of gambel oak, various species of juniper, pinon and other tree species.

Due to uncertain results, all work on direct seeding of tree species should be developed on a study basis until such time as sufficient information is at hand justifying the expansion of this phase of the revegetation program.

Field Memorandum #SCS-151 states in clear and unmistakable language what is meant by the term "Allowable Planting" as applied to tree species. This memorandum should be referred to when any questions arise as to the legitimacy of proposed types of tree plantings.

In the past a number of plantings of tree species have been made on engineering structures. Some of these plantings are questionable from the standpoint of fulfilling the primary function of erosion control. In all instances proposed planting on structures or plantings which may affect the maintenance or function of structures should receive the approval of the district or project engineering section.

Fire Protection Requirements

For all woodland areas and plantings necessitating protection from fire there must be included in the plan of conservation operations a statement to the effect that the cooperator agrees to take every reasonable precaution to protect woodland or timber areas or plantings from damage by fire.

